

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11967-3-3 (1988): Radio Frequency Coaxial Cables, Part 3: Solid Extruded/ Tape Wrapped PTFE, Section 3: Flexible Type R 50-3-F-03 [LITD 6: Wires, Cables, Waveguides and Accessories]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Wires and Cables for Electronic Equipment Sectional Committee. LTDC 18: Panel for RF Cables. LTDC 18/P1 [Ref : Doc : LTDC 18 (1176)]

Indian Standard
SPECIFICATION FOR
RADIO FREQUENCY COAXIAL CABLES
PART 3 SOLID EXTRUDED/TAPE WRAPPED PTFE
Section 3 Flexible Type R 50-3-F-03

0. General — IS : 5026-1987 'General requirements and tests for radio frequency cables (*first revision*)' is a necessary adjunct to this standard (Part 3/Sec 3).

1. Outline Drawing — See Fig. 1.

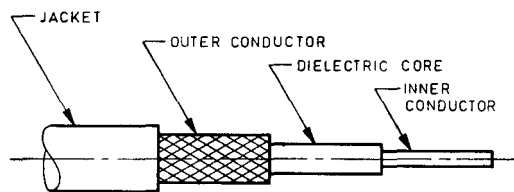


FIG. 1 CONFIGURATION

2. Construction — See Table 1.

3. Requirements

3.1 Dimensions, Configuration and Description — See Fig. 1 and Table 1.

| TABLE 1 DESCRIPTION | | |
|---------------------|-----------------|---|
| SI No. | Components | Construction Details |
| i) | Inner conductor | Solid silver-coated, copper-covered steel wire Diameter : 0.99 ± 0.2 mm |
| ii) | Dielectric core | Type F-1 or F-2 : Solid, extruded tape wrapped PTFE Diameter : 2.95 ± 0.13 mm |
| iii) | Outer conductor | Single braid of 0.13 mm silver-coated copper wire Diameter : 3.71 mm Coverage : 90 percent, <i>Min</i> Carriers 16 Ends 7 Picks/cm : $4.53 \pm 10\%$ |
| iv) | Jacket | Type IX : FEP Diameter : 4.32 ± 0.13 mm |

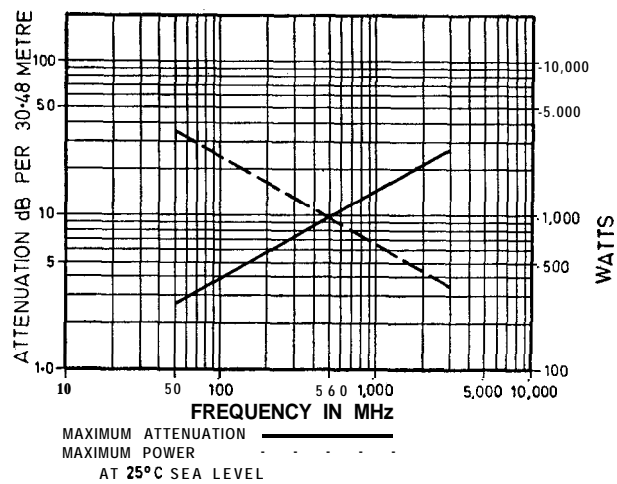
3.2 Environmental and Mechanical Tests

| Tests | Requirements | Clause Reference to IS : 5026-1987 |
|------------------------------------|-------------------------------------|---------------------------------------|
| Visual and mechanical examination: | | |
| Eccentricity | 10 percent, <i>Max</i> | 6.4.3 |
| Adhesion of conductors: | | |
| Inner conductor to core | 18 N, <i>Min</i> , 67 N, <i>Max</i> | 6.4.4 |
| Stress crack resistance* | $230 \pm 5^{\circ}\text{C}$ | 6.20 |
| Dimensional stability: | $200 \pm 5^{\circ}\text{C}$ | 6.25 |
| Inner conductor from core | 1.6 mm, <i>Max</i> | |
| Inner conductor from jacket | 3.2 mm, <i>Max</i> | |
| Flammability* | | 6.28 |
| Weight* | 46 g/m, <i>Max</i> | 6.31 |

*When specially required.

3.3 Electrical Tests

| Tests | Requirements | Clause Reference to IS : 5026-1987 |
|---------------------------|-------------------------|---------------------------------------|
| Continuity | | 6.5 |
| Spark test | 2 000 V rms, <i>Min</i> | 6.6 |
| Voltage withstanding | 5 000 V rms, <i>Min</i> | 6.7 |
| Corona extinction voltage | 1 900 V rms, <i>Min</i> | 6.9 |
| Characteristic impedance | 50 ± 2 ohms | 6.10 |
| Attenuation | See Fig. 2 | 6.11 |
| Structural return loss* | See Fig. 3 | 6.12 |
| Capacitance | 96'1 pF/m, Nominal | 6.13 |



| Frequency (MHz) | Attenuation (dB) | Power (Watts) |
|-----------------|------------------|---------------|
| 50 | 2'6 | 3 500 |
| 100 | 4'0 | 2 400 |
| 200 | 6'0 | 1 600 |
| 400 | 8'8 | 1 100 |
| 1 000 | 18 | 650 |
| 3 000 | 27 | 340 |

FIG. 2 POWER RATING AND ATTENUATION

*When specially required.

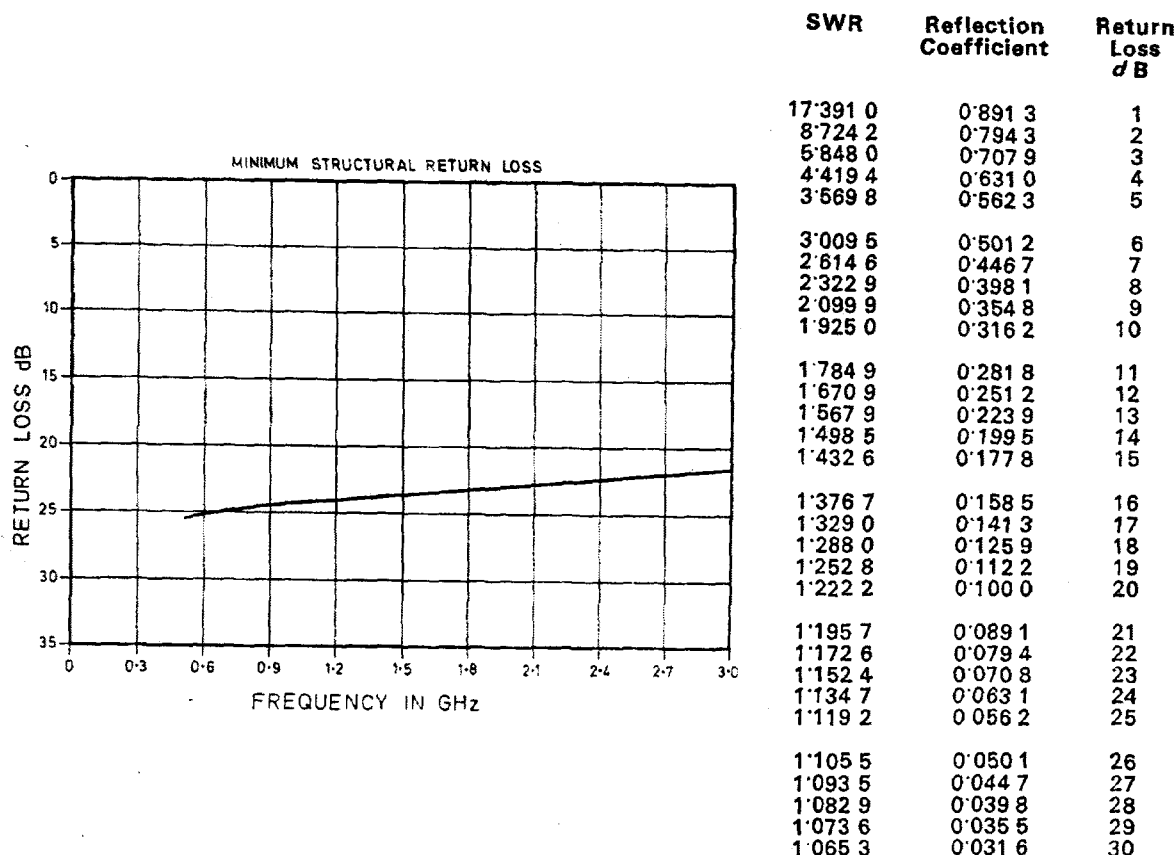


FIG. 3 STRUCTURAL RETURN LOSS

4. Engineering Information

Continuous working voltage : 1 400 V rms, *Max*

Operating frequency : 3 GHz, *Max*

Velocity of propagation : 69.5 percent, Nominal

Power rating : *See Fig. 2*

Operating temperature range : -55 to +200°C

Inner conductor properties:

DC resistance (maximum at 20°C) : 91.71 ohms/km

Elongation : 1 percent, *Min*

Tensile strength : 760 MN/m²

Engineering notes : This cable is useful in general purpose, high temperature application (*see* connector series 'TNC' and 'BNC').

EXPLANATORY NOTE

This standard is based on MIL-C-17/111B (1977) 'Military specification sheet cables, radio frequency, flexible, coaxial, 50 ohms, M17/111-RG 303', issued by the Department of Defence, USA.